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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,754	07/30/2004	Timothy E. Ostromeck	000407-203	6745

29306 7590 05/26/2005

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EXAMINER

DHARIA, PRABODH M

ART UNIT	PAPER NUMBER
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2673

DATE MAILED: 05/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/710,754	OSTROMEK ET AL.	
	Examiner	Art Unit	
	Prabodh M. Dharia	2673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Priority

1. Applicant has complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 119(e) as follows: specific reference to the earlier filed application has made in the instant application.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The abstract of the disclosure is objected to because it repeats information given in the title. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 1-3,7-11,14-16,20-24,28,29,33-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ritchey (5,495,576) in view of Smyth (5,583,795).

Regarding Claim 1, Ritchey teaches a man-portable sensor fusion system (Col. 7, Lines 30,31, Col.8, Lines 44-46, Col. 7, Lines 55-57) comprising: sensor unit having at least a first and second sensor arranged along a sensor axis (Col. 24, Lines 41-45); head adapting means for providing support to mount at least one selected device about a user's cranium (Col. 24, lines 55-57 cranium described as skull by Webster dictionary, helmet of HMD worn on human head or skull); and, securing means attached to the sensor unit for mounting the sensor unit to the head adapter (Col. 24, Lines 48-51); the sensor unit being mounted above an ocular axis formed between a pair of eyes of the user when the sensor unit is attached to the head adapter element (Col. 24, Lines 41-45, 48-51,55-57, ocular axis is the axis of vision defined by Webster); the sensor axis when the sensor unit is secured to the user with the head adapter element is essentially perpendicular to the user's ocular axis (Col. 22, Lines 45-67).

However, Ritchey fails to recite ocular axis.

However, Smyth teaches, securing means attached to the sensor unit for mounting the sensor unit to the head adapter (Col. 4, Lines 55-57); the sensor unit being mounted above an ocular axis formed between a pair of eyes of the user when the sensor unit is attached to the head adapter element (Col. 6, Lines 7-38, Col. 5, Lines 21-32); the sensor axis when the sensor unit is secured to the user with the head adapter element is essentially perpendicular to the user's ocular axis (Col. 10, Line 55 to Col. 11, Line 18).

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Thus it would have been obvious to one in the ordinary skill in the art at the time of invention was made to incorporate the teaching of Smyth in the teaching of Ritchey to be able to control computerized machinery using eyetracker by ocular gaze point of regard and fixation duration, this parameter maybe used to pre-select display element causing it to be illuminated as feedback to the user.

Regarding Claim 2, Ritchey teaches the adapter element is a frame structure for wearing by the user (Col. 24, Lines 55-57).

Regarding Claim 3, Ritchey teaches the adapter element is a head covering for wearing by the user (Col. 24, Lines 55-57).

Regarding Claim 7, Ritchey teaches the sensor unit is adapted to transmit a desired signal for reception (Col. 24, lines 45-51).

Regarding Claim 8, Ritchey teaches the sensor unit is adapted to compensate for parallax distortion between the plurality of sensors (Col. 30, Lines 53-67).

Regarding Claim 9, Smyth teaches the securing means is adapted to permit tilting of the sensor unit (Col. 10, Lines 23-54).

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Regarding Claim 10, Ritchey teaches the securing means is adapted to permit detachment of the sensor unit (Col. 10, Lines 46-59).

Regarding Claim 11, Ritchey teaches a video means operably connected to the plurality of sensors for displaying an image (Col. 9, Lines 46-67).

Regarding Claim 14, Ritchey teaches a man-portable sensor fusion system (Col. 7, Lines 30,31, Col.8, Lines 44-46, Col. 7, Lines 55-57) comprising: sensor unit having at least a first and second sensor arranged along a sensor axis (Col. 24, Lines 41-45); head adapting means for providing support to mount at least one selected device about a user's cranium (Col. 24, lines 55-57 cranium described as skull by Webster dictionary, helmet of HMD worn on human head or skull); and, securing means attached to the sensor unit for mounting the sensor unit to the head adapter (Col. 24, Lines 48-51); the sensor unit being mounted above an ocular axis formed between a pair of eyes of the user when the sensor unit is attached to the head adapter element (Col. 24, Lines 41-45, 48-51,55-57, ocular axis is the axis of vision defined by Webster); the sensor axis when the sensor unit is secured to the user with the head adapter element is essentially perpendicular to the user's ocular axis (Col. 22, Lines 45-67).

However, Ritchey fails to recite ocular axis.

However, Smyth teaches, securing means attached to the sensor unit for mounting the sensor unit to the head adapter (Col. 4, Lines 55-57); the sensor unit being mounted above an ocular axis formed between a pair of eyes of the user when the sensor unit is attached to the head

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adapter element (Col. 6, Lines 7-38, Col. 5, Lines 21-32); the sensor axis when the sensor unit is secured to the user with the head adapter element is essentially perpendicular to the user's ocular axis (Col. 10, Line 55 to Col. 11, Line 18).

Thus it would have been obvious to one in the ordinary skill in the art at the time of invention was made to incorporate the teaching of Smyth in the teaching of Ritchey to be able to control computerized machinery using eyetracker by ocular gaze point of regard and fixation duration, this parameter maybe used to pre-select display element causing it to be illuminated as feedback to the user.

Regarding Claim 15, Ritchey teaches the adapter element is a frame structure for wearing by the user (Col. 24, Lines 55-57).

Regarding Claim 16, Ritchey teaches the adapter element is a head covering for wearing by the user (Col. 24, Lines 55-57).

Regarding Claim 20, Ritchey teaches the sensor unit is adapted to transmit a desired signal for reception (Col. 24, lines 45-51).

Regarding Claim 21, Ritchey teaches the sensor unit is adapted to compensate for parallax distortion between the plurality of sensors (Col. 30, Lines 53-67).

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Regarding Claim 22, Smyth teaches the securing means is adapted to permit tilting of the sensor unit (Col. 10, Lines 23-54).

Regarding Claim 23, Ritchey teaches the securing means is adapted to permit detachment of the sensor unit (Col. 10, Lines 46-59).

Regarding Claim 24, Ritchey teaches a video means operably connected to the plurality of sensors for displaying an image (Col. 9, Lines 46-67).

Regarding Claim 27, Regarding Claim 1, Ritchey teaches a man-portable sensor fusion system (Col. 7, Lines 30,31, Col.8, Lines 44-46, Col. 7, Lines 55-57) comprising: sensor unit having at least a first and second sensor arranged along a sensor axis (Col. 24, Lines 41-45); head adapting means for providing support to mount at least one selected device about a user's cranium (Col. 24, lines 55-57 cranium described as skull by Webster dictionary, helmet of HMD worn on human head or skull); and, securing means attached to the sensor unit for mounting the sensor unit to the head adapter (Col. 24, Lines 48-51); the sensor unit being mounted above an ocular axis formed between a pair of eyes of the user when the sensor unit is attached to the head adapter element (Col. 24, Lines 41-45, 48-51,55-57, ocular axis is the axis of vision defined by Webster); the sensor axis when the sensor unit is secured to the user with the head adapter element is essentially perpendicular to the user's ocular axis (Col. 22, Lines 45-67).

However, Ritchey fails to recite ocular axis.

However, Smyth teaches, securing means attached to the sensor unit for mounting the sensor unit to the head adapter (Col. 4, Lines 55-57); the sensor unit being mounted above an

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ocular axis formed between a pair of eyes of the user when the sensor unit is attached to the head adapter element (Col. 6, Lines 7-38, Col. 5, Lines 21-32); the sensor axis when the sensor unit is secured to the user with the head adapter element is essentially perpendicular to the user's ocular axis (Col. 10, Line 55 to Col. 11, Line 18).

Thus it would have been obvious to one in the ordinary skill in the art at the time of invention was made to incorporate the teaching of Smyth in the teaching of Ritchey to be able to control computerized machinery using eyetracker by ocular gaze point of regard and fixation duration, this parameter maybe used to pre-select display element causing it to be illuminated as feedback to the user.

Regarding Claim 28, Ritchey teaches the adapter element is a frame structure for wearing by the user (Col. 24, Lines 55-57).

Regarding Claim 29, Ritchey teaches the adapter element is a head covering for wearing by the user (Col. 24, Lines 55-57).

Regarding Claim 33, Ritchey teaches the sensor unit is adapted to transmit a desired signal for reception (Col. 24, lines 45-51).

Regarding Claim 34, Ritchey teaches the sensor unit is adapted to compensate for parallax distortion between the plurality of sensors (Col. 30, Lines 53-67).

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Regarding Claim 35, Smyth teaches the securing means is adapted to permit tilting of the sensor unit (Col. 10, Lines 23-54).

Regarding Claim 36, Ritchey teaches the securing means is adapted to permit detachment of the sensor unit (Col. 10, Lines 46-59).

Regarding Claim 37, Ritchey teaches a video means operably connected to the plurality of sensors for displaying an image (Col. 9, Lines 46-67).

6. Claims 4-6,17-19,30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ritchey (5,495,576) in view of Smyth (5,583,795) as applied to claim1-3,7-11,14-16,20-24,28,29,33-37 above, and further in view of Gross et al. (5,864,481).

Regarding Claim 4, Smyth teaches the adapter element is a ballistic helmet for wearing by the user (Col. 13, lines 29-40).

However, Ritchey modified by Smyth fails to recite ballistic helmet.

However, Gross et al. teaches ballistic helmet (Abstract, Col. 2, Lines 54-63).

Thus it would have been obvious to one in the ordinary skill in the art at the time of invention was made to incorporate the teaching of Gross et al. in the teaching of Ritchey modified by Smyth to be able to have an innovative and improved vision and communication Land Warrior system with ballistic helmet.

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Regarding Claim 5, Gross et al. teaches the sensor unit is battery powered (Col. 6, Lines 53-57).

Regarding Claim 6, Gross et al. teaches a battery holder element is attached to the head adapter element such that the battery holder is on an opposite side of the user's cranium to the sensor unit when being used by the user (Col. 7, Lines 9-13, Col. 6, Lines 53-57, figure 3).

Regarding Claim 17, Gross et al. teaches ballistic helmet (Abstract, Col. 2, Lines 54-63).

Regarding Claim 18, Gross et al. teaches the sensor unit is battery powered (Col. 6, Lines 53-57).

Regarding Claim 19, Gross et al. teaches a battery holder element is attached to the head adapter element such that the battery holder is on an opposite side of the user's cranium to the sensor unit when being used by the user (Col. 7, Lines 9-13, Col. 6, Lines 53-57, figure 3).

Regarding Claim 30, Gross et al. teaches ballistic helmet (Abstract, Col. 2, Lines 54-63).

Regarding Claim 31, Gross et al. teaches the sensor unit is battery powered (Col. 6, Lines 53-57).

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Regarding Claim 32, Gross et al. teaches a battery holder element is attached to the head adapter element such that the battery holder is on an opposite side of the user's cranium to the sensor unit when being used by the user (Col. 7, Lines 9-13, Col. 6, Lines 53-57, figure 3).

7. Claims 12,13,25,26,38,39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ritchey (5,495,576) in view of Smyth (5,583,795) as applied to claim 1-3,7-11,14-16,20-24,28,29,33-37 above, and further in view of Kurahashi et al. (JP 07-333552).

Regarding Claim 12, Ritchey teaches a video unit attaches to the head adapter (Col. 34, Lines 30-37).

However, Ritchey modified by Smyth fails to recite a video unit attaches to the head adapter.

However, Kurahashi et al. teaches a video unit attaches to the head adapter (constitution, page 6, paragraph 19).

Thus it would have been obvious to one in the ordinary skill in the art at the time of invention was made to incorporate the teaching of Kurahashi et al. in the teaching of Ritchey modified by Smyth to be able to have an attachable /detachable user friendly head mounted display.

Regarding Claim 13, Kurahashi et al. teaches the video unit is detachable from the head adapter (constitution, page 6, paragraph 19, page 3, Claim 1).

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Regarding Claim 25, Kurahashi et al. teaches a video unit attaches to the head adapter (constitution, page 6, paragraph 19).

Regarding Claim 26, Kurahashi et al. teaches the video unit is detachable from the head adapter (constitution, page 6, paragraph 19, page 3, Claim 1).

Regarding Claim 38, Kurahashi et al. teaches a video unit attaches to the head adapter (constitution, page 6, paragraph 19).

Regarding Claim 39, Kurahashi et al. teaches the video unit is detachable from the head adapter (constitution, page 6, paragraph 19, page 3, Claim 1).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hanayama et al. (2002/0149545 A1) Head mounted display system.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prabodh M. Dharia whose telephone number is 571-272-7668. The examiner can normally be reached on M-F 8AM to 5PM.

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10. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any response to this action should be mailed to:

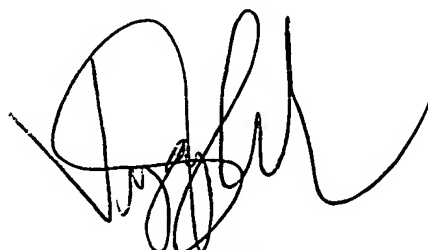
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05-16-2005



VIJAY SHANKAR
PRIMARY EXAMINER